

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 April 2004 (29.04.2004)

PCT

(10) International Publication Number
WO 2004/036717 A1

(51) International Patent Classification⁷: **H02J 7/00**

(74) Agents: **PARK, Cheon-Doh** et al.; Rm 401, Hwawon B/D, 746-1, Yeoksam-dong, Kangnam-gu, Seoul 135-925 (KR).

(21) International Application Number:
PCT/KR2003/002116

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 14 October 2003 (14.10.2003)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:
10-2002-0062558 14 October 2002 (14.10.2002) KR
20-2002-0030609 14 October 2002 (14.10.2002) KR

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): **CHUNGPA EMT CO., LTD.** [KR/KR]; 9F, No.906, Daeryoong Technotown 6th, 493-6, Kasan-dong, Kumsan-gu, Seoul 153-771 (KR).

(72) Inventors; and

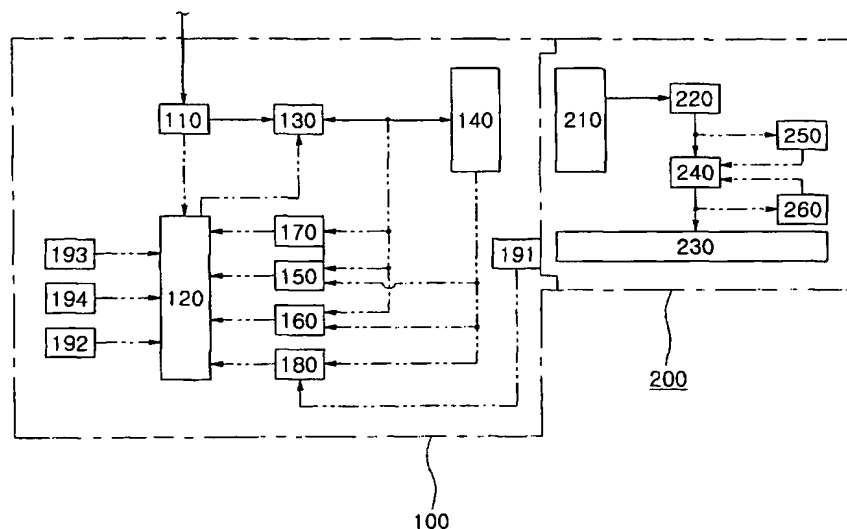
(75) Inventors/Applicants (*for US only*): **KIM, Jin-Sun** [KR/KR]; 929-38, Bangbae-2dong, Seocho-ku, Seoul 137-062 (KR). **KIM, Young-Jun** [KR/KR]; 1150-10, Baksuk-dong, Ilsan-ku, Koyang City, Kyungki-do 411-815 (KR).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **NON-CONTACT TYPE BATTERY PACK CHARGING APPARATUS**



(57) Abstract: The present invention relates to a non-contact type battery pack charging apparatus using a magnetic field. In the non-contact type battery pack charging apparatus of the present invention, a main control unit (120) receives input data from a voltage comparison unit (140), a current comparison unit (150), a voltage detection unit (170) and a current detection unit (180), determines whether required conditions are fulfilled, such as whether an object is installed, whether the installed object is a battery pack (200), what the charge capacity of the battery pack (200) is, and whether the charging of the battery pack (200) has been completed, and controls a variable-voltage frequency generation unit (130) to be operated so as to correspond to the required conditions. Accordingly, the charging of the battery pack (200) is performed to correspond to the charging capacity of the battery pack (200) only when the battery pack (200) is installed.